REMARKS

Reconsideration of the application is requested in view of the modifications above and the remarks below. Claims 1-6 and 9 are pending in the Application. Claim 1 has been amended. Support for the amendment is found on page 7, lines 1-6 and Claim 6, as originally filed. No new matter has been added. Claim 6 has been cancelled. Also, Claims 7 and 8 have been cancelled because they are directed to a non-elected invention.

Specification

The Office Action alleges that:

> The specification refers to several prior art references as source materials in making the instant dispersions. It is the examiner's position that one having ordinary skill in the art would have known how to make the 3,4-polyalkylenedioxythiophenes disclosed. To the extent applicants differ in this opinion, they should set forth their position. (Office Action, pg. 2, para 2).

One having ordinary skill in the art would not know how to make the dispersion comprising polyanions and cationic 3,4-polyalkylenedioxythiophenes and water or a water/alcohol mixture as a solvent, wherein about 90% of the particles of the dispersion are less than 50 nm and wherein the resistivity of the coatings produced therefrom by building a dispersion film and removing the solvent from the dispersion film is at least 5000 Ωcm, wherein the weight ratio of cationic 3,4-polyalkylene-dioxythiophene to polyanion have a ratio ranging from between about 1:8 and about 1:25 and which was treated by high pressure homogenization applying a pressure from 100 to 1000 bar of Applicants' invention.

The Office Action does not establish any support for the allegation that one of ordinary skill in the art would know how to make 3,4-polyalkylenedioxythiophenes. To establish that "one skilled in the art would have known how to make" Applicants' invention, the Examiner must establish a prima facie case of obviousness or rely on documentary evidence to support the Examiner's conclusion.

Regarding that the reference example is other than in English, Applicants' have provided a U.S. patent equivalent (U.S. 6,391,481) to EP A 991 303 and is

provided herewith for the Examiner's convenience. Reconsideration is requested.

REJECTION UNDER 35 USC 112, second paragraph

Claims 1-2, 4-6 and 9 stand rejected under 35 USC 112, second paragraph, as indefinite. The rejection should be withdrawn in view of the modifications above and the remarks below.

Claim 1 has been amended to include "wherein the resistivity of the coatings produced by building a dispersion film and removing the solvent from the dispersion film is at least about 5000 Ωcm, wherein the weight ratio of cationic 3,4-polyalkylene-dioxythiophene to polyanion have a ratio ranging from between about 1:8 and about 1:25 and which was treated by high pressure homogenization applying a pressure from 100 to 1000 bar." Thus, the dispersion property based on the resistivity of the coatings is definite.

Claims 2, 4-6 and 9 depend from Claim 1, which as discussed is believed to be allowable, thus Claims 2, 4-6 and 9 are also believed to be allowable. Reconsideration is requested.

Claim 2 has been amended to delete "about." Reconsideration is requested.

REJECTION UNDER 35 USC 102(e) and 103(a)

Claims 1-2, 4-6 and 9 stand rejected under 35 USC 102(e) as anticipated by or in the alternative under 35 USC 103(a) as obvious over Louwet et al. The rejection should be withdrawn in view of the modifications above and the remarks below.

Applicants' invention is related to a dispersion comprising polyanions and cationic 3,4-polyalkylenedioxythiophenes and water or a water/alcohol mixture as a solvent, wherein about 90% of the particles of the dispersion are less than 50 nm and wherein the resistivity of the coatings produced by building a dispersion film and removing the solvent from the dispersion film is at least about 5000 Ωcm, wherein the weight ratio of cationic 3,4-polyalkylene-dioxythiophene to polyanion have a ratio ranging from between about 1:8 and about 1:25 and which was treated by high pressure homogenization applying a pressure from 100 to 1000 bar.

The Office Action alleges that:

> To the extend the Louwet et al differs from the claims in the particle size distribution, Bayer Ag and Jonas et al column 2, lines 7 et seq)

teaches the very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein. Bayer Ag and Jonas et al (examples and column 2, lines 7 et seq) disclose 3,4-polyalkylenedioxythiophene/polystyrene sulfonate dispersions (PEDT/PSS, wt ratio = 1:2.5; 1:4; and 1:8). Bayer Ag and Jonas et al further teach that by varying the specific ratio of the conductive

> polycations (PEDT) to the nonconductive counterions or nonionic binders (PSS), the occurrence of short circuits or cross-talk can be significantly reduced. (Office Action, pg. 6, para 1).
>
> The Office Action alleges that:
>
> To the extend the Louwet et al differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the degree of homogenization and/or microfluidization clearly contemplated in the Louwet et al reference. Louwet et al (examples, particularly column 17, lines 1-16) disclosed treatment of the dispersions with a homogenizer and a microfluidizer. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the degree of homogenization and/or microfluidization for the advantage of obtaining a more homogeneous and stable compositions and coating resulting therefrom. (Office Action, pg. 5, para 2).

Louwet et al discloses material that differs not only in regard to the particle size distribution, but also in regard to the homogenization process and the resistivity of the dried material from such dispersions. However, the Office Action alleges that the dispersions may not be changed by the homogenization in respect to their resistivity. If one skilled in the art looks at example 3 in column 14, lines 22-61, Louwet et al discloses that the treatment of a dispersion of a polyanion and a polymer of a thiophene, that was first frozen and then thawed and formed agglomerates of the polymer material, with a homogenizer at 400 bar does not change the surface resistivity of such material. Because the surface resistivity is direct proportional to the resistivity, one skilled in the art reading the disclosure of Louwet et al learns also that the resistivity is not changed during the treatment of the dispersion with the microfluidizer.

Surprisingly, the Applicants found that treating the specific dispersion according to Claim 1 by high pressure homogenization leads to higher resistivity of the dried material. Further, there is disclosure or suggestion in Louwet et al about the specific weight ratio between PEDT and PSS. Accordingly, Louwet et al does not obviate or anticipate Applicants' invention.

REJECTION UNDER 35 USC 103(a)

Claims 1-2, 4-6 and 9 stand rejected under 35 USC 103(a) as anticipated by Louwet et al and further in view of Bayer AG DE 198 41 803 and Jonas et al. The rejection should be withdrawn in view of the modifications above and the remarks below.

Jonas does not disclose a homogenization treatment mentioned. Further, DE' 803 does not teach or suggest that a dispersion may be treated by high pressure homogenization of from 100 to 1000 bar. Also, DE' 803 and Jonas give no teaching in the specific range of particle size of the dispersion.

It seems improper to combine the teaching of Louwet et al (homogenization of thawed dispersions), which according to Louwet et al does not alter Louwet's dispersions, with the teaching of DE' 803 and Jonas which disclose the dispersions in general but do not teach or suggest specific properties (particle size distribution, PEDT/PSS ratio and resistivity) of the dispersions of amended Claim 1. Reconsideration is requested.

REJECTION UNDER 35 USC 103(a)

Claims 1-2, 4-6 and 9 stand rejected under 35 USC 103(a) as obvious over DE 803, in view of Jonas et al and optionally in view of Kraft et al. The rejection should be withdrawn in view of the modifications above and the remarks below.

The Office Action alleges that:

> Bayer Ag and Jonas et al differ from the claims in the particle size and the resistivity.
>
> Bayer Ag and Jonas et al (examples and column 2, lines 7 et seq) disclose 3,4-polyalkylenedioxythiophene/polystyrene sulfonate dispersions (PEDT/PSS, wt ratio = 1:2.5; 1:4; and 1:8). Bayer Ag and Jonas et al column 2; lines 7 et seq) teaches the very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein. Bayer Ag and Jonas et al further teach that by varying the specific ratio of the conductive polycations (PEDT) to the nonconductive counterions or nonionic binders (PSS), the occurrence of short circuits or crosstalk can be significantly reduced.
>
> It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the particle size of the dispersion for increased particle packing at the coating surface and increased dispersion homogeneity. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the ratio of the PEDT/PSS ratio for the advantage of varying

the resistivity and conductivity of the layered formed therefrom.
The coating resistivity of the claims would have been an expected result of varying the PEDT/PSS ratio due to the decrease of the conductive polycations and increase of the nonconductive polyanions clearly contemplated in the reference.
Furthermore, Krafft et al (examples) exemplifies PEDT/PSS dispersions and teaches (column 3, lines 11-18) teaches the particle sizes of the dispersions may range from 5 nm to 100 nm. These references are combinable because they teach PEDT/PSS dispersions. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the particle size of said dispersions within the conventional size ranges as shown Krafft et al reference for the advantage of stability and the expectation of a more homogeneous final product. (Office Action, pg. 7, para 2 - pg. 8, para 3).

As discussed, neither DE '803 nor Jonas et al, either alone or in combination, teach or suggest Applicants' invention. Further, Krafft et al does not teach or suggest, in combination with DE '803 nor Jonas et al, Applicants' invention of amended Claim 1. Reconsideration is requested.

In view of the foregoing amendment and remarks, allowance of the pending claims is earnestly requested.

Respectfully submitted,

By _____
Jill Denesvich
Attorney for Applicants
Reg. No. 52,810

Lanxess Corporation
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-2268
FACSIMILE PHONE NUMBER:
(412) 777-2612

/jme

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